



U.S. Department  
of Transportation

**Federal Highway  
Administration**

EX PARTE OR LATE FILED

400 Seventh St., S.W.  
Washington, D.C. 20590

Refer to: HVH-1

Mr. William Caton  
The Secretary  
Federal Communications Commission  
Washington, D.C. 20554

Re: Use of Radio Frequencies Above  
40 GHz for New Radio Applications  
ET Docket No. 94-124

Dear Mr. Caton:

The Federal Highway Administration (FHWA) has played a key role in researching and testing technologies and services associated with the National Intelligent Transportation Systems (ITS) Program. The goal of the ITS Program is to apply advanced technology to improve travel and safety on our Nation's roadway system. Critical components of the ITS program are Advanced Vehicle Control and Safety Systems, of which Vehicle Collision Avoidance Systems (VCAS) are a subset. These systems are vehicle-and-roadway-based devices that enhance the control of a vehicle by facilitating and augmenting driver performance.

We have reviewed the Commission's Notice of Proposed Rulemaking regarding the use of *Radio Frequencies Above 40 GHz for New Radio Applications* (enclosed). The ITS Joint Program Office fully endorses the Federal Communications Commission's proposal to use part of this frequency band for VCAS. We realize that the comment period has closed on this docket, but respectfully request that the Commission consider the FHWA's submission.

Should you have any questions regarding this submittal, please contact Ms. Beverly Russell at 202 366-2202 on policy issues or Mr. Frank Mammano at 703 285-2405 on technical issues.

Sincerely yours,

Christine M. Johnson  
Director, Intelligent Transportation  
Systems Joint Program Office

Enclosure

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BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C.

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In the Matter of:

Use of Radio Frequencies Above 40 GHz  
for New Radio Applications

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ET Docket No. 94-124

COMMENTS OF THE FEDERAL HIGHWAY ADMINISTRATION

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Christine Johnson  
Director, Intelligent Transportation Systems  
Joint Program Office

Federal Highway Administration

Department of Transportation  
400 Seventh Street, S.W.  
Washington, D.C. 20590

**BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C.**

<b>In the Matter of:</b>	)	
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<b>Use of Radio Frequencies Above 40 GHz for New Radio Applications</b>	)	<b>ET Docket No. 94-124</b>
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**COMMENTS OF THE FEDERAL HIGHWAY ADMINISTRATION**

**BACKGROUND**

On November 30, 1994, the Federal Communications Commission (FCC) released a Notice of Proposed Rulemaking proposing to open frequency bands above 40 GHz for commercial development. The FCC stated that the new frequency bands will permit the development of short-range wireless radio systems that require very high bandwidth or data transfer rates. The FCC stated that uses of the frequency band could include applications involving the National Information Infrastructure (NII) and automobile radar systems for vehicle collision avoidance systems (VCAS).

The national Intelligent Transportation Systems (ITS) Program seeks to apply advanced communications and computer technologies in order to decrease congestion, improve safety, reduce environmental harm and increase transit ridership. Critical components of the ITS Program are Advanced Vehicle Control and Safety Systems (AVCSS) which include longitudinal collision avoidance, lateral collision avoidance, intersection collision avoidance, vision enhancement for crash avoidance, safety readiness, pre-crash restraint deployment (e.g., airbags), and automated highway systems. These systems are vehicle- and roadway-based devices that enhance the control of a vehicle by facilitating and augmenting driver performance. The systems provide safety and warning messages within vehicles (i.e., through computer-generated systems or other electronic functions), and support in-vehicle signing (i.e., seeing a picture of upcoming traffic and warning signs on a screen in your vehicle as you travel down the roadway) which grows in importance as our population ages.

Vehicle Collision Avoidance Systems (VCAS), a subset of AVCSS, are currently in limited use on interstate buses and have been proven to be very effective in reducing accidents. American automobile manufacturers have been examining options that are suitable for installation in private passenger cars, and are poised to begin experimenting with systems if appropriate spectrum allocation can be obtained.

**SUMMARY**

The FCC has requested the Federal Highway Administration's (FHWA) advice on the use of the frequency band for testing VCAS. The FCC has also been presented with proposals by several automobile manufacturers for spectrum allocation for VCAS. The FHWA, and the ITS Joint Program Office in particular, fully endorse these petitions and ask the FCC to

include the consideration of VCAS requirements as part of the deliberations on this Docket. Two different services are likely to evolve that are associated with VCAS. The first is the collision avoidance "radar" itself. The second is a high-capacity, short-range data link that would be used for vehicles that are on a collision course.

In order to foster research into the best techniques for providing these functions, and further to assess the impact of frequency diversity on the ability of economical systems to be built in large numbers without mutual interference, the FHWA asks the Commission to consider the allocation of 3-4 different bands (of 1-2 GHz each) above 40 GHz for VCAS. The bands already requested by various automobile manufacturers are endorsed by the FHWA for this purpose.

Respectfully yours,

Christine Johnson, Director  
Intelligent Transportation Systems  
Joint Program Office (HVV-1)